

Development of Finger Painting Learning Media to Improve The Motor Skills of Kindergarten Children

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Abstract: Research aims to analyze the effectiveness of the development of finger painting learning media to improve the motor skills of kindergarten children B Rembang. Research methods with Research and Development design include ten steps; Research and Information Collecting, planning, Develop Preliminary Form of Product, Preliminary Field Testing, Main Product Revision, Main Field Testing, Operational Product Revision, Operational Field Testing, Final Product Revision, Dissemination and Implementation. The population is kindergarten students of group B Rembang. Sampling technique with purposive sampling. Data collection techniques by means of tests, questionnaires, observations, and interviews. Furthermore, experts carry out validation tests, statistical inference, and practicality tests. The results of the study obtained a needs analysis through interviews and observations. The need for media development is carried out to improve the motoric child with finger painting. Learning media development design begins with preliminary studies, analysis, formulation of learning media development, media design, prototype and instrument development. Media eligibility with a test for media experts with a score of 92% category is very feasible. Validation of media experts obtained a result of 4.7% with an excellent predicate. Questionnaires to teachers show the number of positive responses as much as 48 out of 50 points, which means the percentage is 96% with the category of especially likes..

Keywords: Development, finger painting, motor skill, motor skill, kindergarten

1. Introduction

According to children's education experts, early childhood is a vulnerable child aged 0-6 years and 0-8 years. Early childhood is a group of children who are in a unique growth and development process. This period is a golden age or golden age in the golden age of early childhood has a great desire to learn. Children learn with all their five senses to understand something and, in a short time, turn to other things to know. This time the child experiences rapid growth and development and will not be repeated in the future (Amalia et al., 2019).

Early childhood is the most optimal time to develop. At this time, the child has a considerable curiosity, doing whatever it takes to fulfil his interest and is easily formed; therefore, the child needs to be guided in a good way and by his age so that later he becomes a child who excels in religion and intellectual. Early age is a perfect time for children to be easily exemplified, listened to, and shown (Ulfa, 2020). Instinctively they are actively moving. They will go anywhere according to interest or pleasure. With this activity, children meet their developmental and learning needs (Munastiwi, 2018), discipline, independence, art, morals and religious values (Johnson et al., 1987; Anderson et al., 2003; Daelmans et al., 2017).

Early childhood is a group of children in a unique growth and development process, in the sense of having a remarkable growth and development pattern (Britto et al., 2017). Physical activity and the release of large amounts of energy are characteristic of children's activities at this time, so the motoric aspect of children needs to be considered. Physical development will determine the ability to move. Physical development includes the development of the body, rough muscles and smooth muscles, which are further referred to as gross and fine motor (Ulfa, 2020). Gross motor development is associated with primary, brain-coordinated movements such as running, walking, jumping, hitting, and pulling.

The child's motoric development is stimulated by providing proper and enjoyable education. Development in early childhood should be with play activities that prioritize freedom for children to explore and move (Guslinda & Kurnia,

2018). Play methods as a form of exercise to help develop child development, one of which is the physical development of children's motor, with the activity of drawing, arranging, sticking, and painting with fingers so that children can develop creativity and motor skills (Maghfuroh & Putri, 2017).

Finger painting is a technique that uses kanji on paper or cardboard with fingers or palms (Widyasanti, 2021). Finger painting (painting with fingers) is one of the painting technique activities by applying paint on wet paper using finger fingers that children can do to pour their imagination through paintings made with children's fingers, in this activity can train fine motor and creativity children to have. Rati & Rediani (2021) explained that children's fine motor skills could be stimulated through plagiarizing shapes, folding paper, thrashing, weaving, poking, cutting, tearing, drawing, colouring, shaping, sewing and finger painting. Finger painting encourages children to use small muscles to help in achieving the child's motoric development.

1.1 Conceptual Framework

Education in early childhood focuses more on laying the foundation for child growth and development. In the learning process, the teacher is a facilitator and motivator to explore all the potentials possessed by children. For example, finger painting activities can be done to optimize the development of early childhood motor skills. The finger Painting game is a technique of painting with fingers directly without using the help of tools. This activity is done by applying colour dough (colour porridge) using the fingers above the drawing field.

1.2 Research Objectives

The objectives of this study are as follows:

- a) Describes the analysis of the needs of finger painting learning media development to improve the motor skills of kindergarten children B Rembang
- b) Describe the form of product design of finger painting learning media development to improve the motor skills of kindergarten children B Rembang
- c) Describes the service of developing finger painting learning media to improve the motor skills of kindergarten children B Rembang
- d) Analyzing the effectiveness of finger painting learning media development to improve the motor skills of kindergarten children B Rembang.

2. Literature Review

Children's motor abilities are split into two categories: gross motor skills and soft motor skills. Children's motions involving vast muscle groups, such as the arms, legs, calves, or the child's entire body, are referred to as gross motor abilities (Febrianta, 2017). Therefore, children's gross motor skills include crawling, running, jumping, throwing, and catching a ball.

Gross motor and soft motor nerve growth are referred to as motor development. Motor development aims to train mastery of abilities reflected in the ability to complete specific motor tasks. Motor quality can be seen from how far the child can perform the given motor task with a certain level of success. Gross motor involves physical movements that call for balance and limb coordination (Ramlee, Rozali, & Yunus, 2022). The gross motor skills of walking, running, jumping, and other activities are examples. A child's motor development is crucial because it influences other kids' overall and integrated motor development. Therefore, teachers can act to raise the motor development stage and simultaneously ensure that these pupils experience holistic development by analysing the motor development stage of kindergarten students.

Rahyubi (2012) mentions the factors that influence children's motor development, namely the nervous system development, physical condition, strong motivation, a conducive environment, psychological aspects, age, gender, and talents and potential. Teachers can support the growth of students' interests, self-confidence, and feelings of competence in various motorised physical activities appropriate for kindergarteners. The capacity and strength of children's muscles will rise with good motor development. Through creative games, teachers can help kids develop their physical and motor skills, which helps kids build self-worth and confidence, trust, responsibility, and concern for others. It also helps kids build relationships with others and learn practical communication skills, as well as their capacity to act or think independently and exercise self-control.

For children to be prepared to pursue higher education, hard motor skills must be developed in early life—for instance, writing, practising balance, and other activities. Early childhood is a period of rapid growth and development, so children need the training to achieve optimal motor skill development. This must be done to ensure that the child's development does not lapse. Therefore, early childhood motor development training is necessary. For instance, finger painting games may improve fine motor skills, particularly finger and wrist movements. In addition, kids can express their choices here in terms of texture, shape, and colour. Activities that help kids practise their fine motor abilities include finger painting. Kids can be creative by using their finger muscles to improve their motor skills. Because the fingers contain numerous nerves directly connected to the brain, painting with their fingers will help children practise their fine

motor abilities (Browne et al., 2000). Teachers can assist in introducing colours and shapes to your child while he paints to broaden his understanding.

3. Methodology

Research methods with Research and Development design include ten steps; Research and Information Collecting, planning, Develop Preliminary Form of Product, Preliminary Field Testing, Main Product Revision, Main Field Testing, Operational Product Revision, Operational Field Testing, Final Product Revision, Dissemination and Implementation. The population is kindergarten students of group B Rembang. Sampling technique with purposive sampling. Data collection techniques through tests, questionnaires, observations, and interviews.

This research instrument uses interviews, questionnaires, observations and documentation—data analysis using instrument feasibility test, effectiveness analysis and t-test.

4. Findings and Discussion

4.1 Needs Analysis

The results of the study found that the analysis of needs was known through interviews and observations. Observations are made on the learning process, teachers and students. The results of learning observations were obtained from as many as one teacher using media, one child had the opportunity to ask questions, one child was more focused on the media used, one teacher added information from the media delivered, and one child was more active, one child was motivated, one child thought critically, one child understood the material, one teacher used the media efficiently and one teacher facilitated with the media used in learning. Observations from 5 teachers observed only one teacher who made teaching preparations using learning media. Media use is not yet following the daily lesson plan and the sub-themes that will be discussed. The media has not increased student enthusiasm and liveliness, the material has not matched the level of development, the teacher does not evaluate learning, and there is no opportunity for children to respond to games, so the children have not been optimal in motor development. Observations from ten children, only two children, showed a sense of pleasure towards the media used by teachers in improving motor, children did not actively ask questions and the media used had less impact on improving the child's fine motor and motoric gross.

The results of the study found that the interviews with ten children showed that children like to paint media, children are interested in drawing media, teachers use learning media, and teachers use less safe media. Teachers use fewer media that increase student activeness, three teachers have done learning with watercolours, three teachers have taught to improve coordination skills, two teachers teach the ability to draw carefully, and four teachers train body balance and move the flexible body. Interviews with teachers resulted that during this time, teachers in learning to improve children's motor skills do not use learning media but only existing media. Teachers also have difficulty creating learning media that fit the theme. By not using exciting media and only in the form of explanations using learning media, teachers are less able to stimulate children's motor skills.

Previous research conducted by Sari, Sariah, & Heldanita (2020) found the need for learning media to support aspects of child development tailored to children's characteristics and needs. Mustika, Huda, & Ridwan (2019) explains that the development of finger painting media is based on the need for activities to train hand and eye coordination, scratch his fingers on a piece of paper and stimulate the child's fine motor. Evivani & Oktaria's research (2020) found that motor development needs to be trained early; for example, this finger painting game can teach fine motor skills, especially finger and wrist movements. In addition, children can express their preferences regarding colour, shape, and texture.

4.2 Media Design

The results of the study found that the implementation of learning in improving children's motor skills in kindergarten has not used learning media that are by the theme and needs of children. Therefore, it is necessary to develop learning media that makes it easier for children to understand the theme of the school environment. Learning media development design begins with preliminary study, analysis, formulation of learning media development, media design, prototype, and instrument development. In the development of this medium, researchers analyzed several components, including:

- a) Specify a Theme - The theme in this research is the development of finger painting learning media to improve the motor skills of kindergarten children in Rembang B.
- b) Determining the Purpose - This research aims to improve children's motor by developing finger painting learning media to improve the motor skills of kindergarten children in Rembang.
- c) Determine the source of learning - Following the themes and sub-themes taught, namely by exploring directly so that students are involved in activities in school.
- d) Media Size - The development of finger painting learning media to improve children's motor skills consists of several types. The guidebook measures 18 x 25 cm, consisting of 1) Cover and beginning, 2) Introduction, 3) Motor development, 4) Finger Painting, 5) Finger Painting Steps, 6) Bibliography, and 7) Builder Profile.



Fig. 1 - Finger painting guide cover view.

Materials and tools consist of 1) Materials with watercolours made by the teacher, 2) Washing tools and washcloths, 3) Worksheets in the form of cardboard with a size of 20-30 cm, 4) The child is asked to draw objects around, 5) Fruit: apples, carrots, 6) Animals: chicken, bird.



Fig.2 - Animal finger painting results.

Previous research conducted by Diani (2021) explained that the media suitable for motoric development is adjusted to the characteristics of attractive children and increases student liveliness. Levin & Brain (2021) state that the design stage is in the form of design and image design. This stage of planning aims to design a learning medium. Lestari's research (2020) mentioned that drawing activities for students were carried out soberly. The standard drawing tool used is a crayon or coloured pencil to express themselves and a source of joy for the child; then, children draw on drawing paper by meeting bright colours combined with other colours without adult intervention. Likewise, mark with the fingers of the hand and use kanji porridge, commonly called (Finger painting).

4.3 Development Feasibility

The study results found that after the preparation of learning media was completed. A validity test was carried out on media experts to determine the level of feasibility of media that had been designed in the learning process, and revisions were carried out to improve the media that had been designed. From the assessment of the media expert, it was obtained that the number of scores had reached 92%, so based on the media expert validation score table, it was categorized as very feasible. Validation of the development of finger painting learning media to improve the motor skills of kindergarten children B Rembang from material experts obtained 4.7% results with excellent predicates, then finger painting learning media to improve the motor skills of kindergarten children B Rembang deserves to be used in the learning process to enhance the motor skills of kindergarten children.

Media eligibility is also carried out with questionnaires, namely questionnaires given by teachers about the implementation of finger painting learning media development trials to improve the motor skills of kindergarten children B Rembang shows that the number of positive responses is 48 out of 50 points which means the percentage is as much as 96% with the category of very likes. Questionnaire results about the child's response showed positive response results obtained as much as 92 or 92% with the type of especially likes. From the percentage of teacher and student responses, it can be concluded that the development of finger painting learning media to improve the motor skills of kindergarten children in Rembang is needed by teachers and children to support learning in enhancing children's motoric.

4.4 Effectiveness Test

The results of the study on the effectiveness test with limited trials got an average control class pretest score of 20.3, a top score of 23, and the lowest score of 18. While in the experimental class, an average of 21.20, the highest score was 25, and the lowest score was 17. The control class posttest score gets an average score of 25.40, with a top score of 29

and the lowest score of 23. While in the experimental class, get an average score of 34.30, with the highest score of 39 and the lowest score of 30. The average pretest scores in the control and experimental groups were almost the same, meaning that the average ability of the control group children and experimental groups had almost the same abilities, and none stood out. The results of the analysis get a Sig value. (2-tailed) of $0.000 < 0.05$, the value of t count is -7.756 and the value of t table with $df = 18$ is 2.101 then the value t calculates $(-7.756) > t \text{ table } (2.101)$. The experimental class gets an N-Gain % value of 69.6, which is interpreted in the category quite effectively. The control class gets an N-Gain value of 25.078 with an ineffective category. The results of this study obtained a significant improvement in motoric ability after using the development of finger painting learning media.

Previous research by Sari et al. (2020) found that finger painting activities can train children to use their senses, namely the sense of touch, because this finger painting activity requires children to come into direct contact with dye dough for painting materials using their fingers. This activity can also help children learn colour and colour mixing because, in this finger painting activity, children can freely choose and mix colour dough that will be used for painting activities. With finger painting activities, children will experience the thought process to be more focused and arouse the child's imagination/fantasy so that the child can respond more precisely and smoothly. The work process will involve the ability of children to master the medium of painting directly using the fingers of the hand as the primary tool. Children will explore various movements of the fingers and make various scribbles or hand strokes.

The study's results with extensive trials found an increase in the average value of the pretest and posttest. The average pretest score is 20.77, and the posttest average is 34.03. The analysis resulted in a sig value of 0.000, where the value of < 0.05 , the value of t calculated at 27.012, while the t-table with $df = 30$ amounted to 2.048, where the importance of $27.012 > 2.048$, then H_0 was rejected, and H_a was accepted, namely the development of an effective finger painting learning media to improve the motor skills of kindergarten children B Rembang. Previous research by Ramadhani et al. (2020) found that using finger painting techniques to enhance fine motor development also increased. That is, what children do can flex their fingers. Both yield 75% BSH and 25% BSB. Exploring the percentage of MB 37.5%, BSH 43.75% and BSB 18.75%, and children can also be neatly arranged from the percentage results of 25%, BSH 68.75% and BSH 6.25%. Increased learning activity in a child's fine motor development stimulates the child's small muscles such as fingers and eye and hand coordination.

Fitriani & Aisyah's research (2020) showed that with the checklist guide of 26 teacher activity activities, there was a better improvement in teacher performance results in the classroom. The results of teacher activity research showed an increase in the percentage of activities carried out by teachers in cycle one from 76.91% to 92.29% in cycle II. Then, the ability of delicate motoric creativity of children aged 5-6 years in finger painting activities using hand fingers is also considered successful. This creativity value increased from cycle I by 53.9% to 84.7% in cycle II. This happens by giving variations in the type of image and colour according to the child's wishes and the intensity of the use of children's fingers when playing finger painting. According to Basa, Sutarto, & Setiawan (2020), finger painting can improve the ability to think and do creative and develop the ability to express aesthetic values by drawing creative works. The benefits of finger painting are that it enhances the ability to think and creatively develop the ability to communicate aesthetic values by drawing creative works and training the finger muscles.

5. Conclusions and Recommendations

The results of the needs analysis are known through interviews and observations. Interviews are conducted with teachers, and students, while observations are carried out through learning, teachers and students. Learning media development design begins with preliminary study, analysis, formulation of learning media development, media design, prototype and instrument development. Media development is also done by analyzing learning implementation planning and determining themes, goals, teaching resources, and media size.

Conclusions show that media development has met the needs of teachers and students. The media developed is valid and reliable and has a good level of validity. The result of finger painting learning media effectively improves the motor skills of kindergarten children B Rembang.

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Conflict of Interest

The authors declare no conflicts of interest.

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